

Serial No.: 10/028,040

Confirmation No.: 2997

Filed: December 21, 2001

For: METHODS FOR PLANARIZATION OF GROUP VIII METAL-CONTAINING SURFACES USING COMPLEXING AGENTS

Remarks

The Office Action mailed March 19, 2004 has been received and reviewed. Claims 1, 6, 16, 28, 33, 35, 37, 38-41, 43, 46-50, 52, 55, and 56 having been amended, claims 14, 26, 32 and 34 having been cancelled, and claims 59-79 having been added, the pending claims are claims 1-13, 15-25, 27-31, 33, and 35-79. Reconsideration and withdrawal of the rejections are respectfully requested.

The new claims are supported by the originally filed claims and the specification at page 13, lines 7-10 and 28-30, for example.

Claims 1, 16, and 28 have been amended to incorporate the language of claims 14, 26, and 34, respectively, which were indicated as allowable. Accordingly, it is respectfully submitted that claims 1-5, 8-13, 15-25, 27-31, 33, 35, and 36 are also allowable as claims 2-5, 8-13, and 15 either directly or indirectly depend from claim 1; claims 17-25 and 27 either directly or indirectly depend from claim 16; and claims 29-31, 33, 35, and 36 depend from claim 28.

Claims 39, 41, and 43 have been amended in the same manner as have claims 1, 16, and 28, respectively. Accordingly, it is respectfully submitted that these claims and their dependent claims 42, 44, and 45 are allowable.

Claims 48, 50, and 52 have been amended in the same manner as have claims 1, 16, and 28, respectively. Accordingly, it is respectfully submitted that these claims and their dependent claims 51, 53, and 54 are allowable.

The 35 U.S.C. §112, First Paragraph, Rejection

The Examiner rejected claims 1-5, 8-27, 34, 37, 39, 41-42, 46, 48, 50, 51, and 55 under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner objected to the term "alkyl." Although Applicants do not agree, and

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they reserve the right to present arguments in a continuing application, for example, this language has been removed from the claims.

The 35 U.S.C. §102 Rejection

The Examiner rejected claims 1-5, 8-13, 15-18, 21-25, 27-30, 32, 33, 35-37, 39, 41, 43, 45-46, 48, 50, 52, 54-55, 57, and 58 under 35 U.S.C. §102 as being anticipated by Sachan et al. (U.S. Patent Publication No. US 2002/0111027 A1). These claims having been amended, this rejection is rendered moot.

In particular, independent claims 37, 46, and 55, and dependent claims 57 and 58, have been amended to recite that the complexing agent is selected from the group consisting of ethylamine, methylamine, triethylamine, trimethylamine and combinations thereof. Sachan et al. does not disclose these complexing agents. With respect to these claims and the Examiner's remarks at page 6 of the Office Action, Applicants' Representatives request clarification. The Examiner's assertion that Applicants' previous arguments fail to comply with 37 C.F.R. § 1.111(b) is not clear. Applicants have pointed out the specific complexing agents disclosed by Sachan et al. (paragraph 0024 lists citric acid, lactic acid, malic acid, and tartaric acid), which are not recited in the list of complexing agents in Applicants' claims. Accordingly, Sachan et al., do not teach or suggest the methods of claims 37, 46, 55, 57, and 58. Furthermore, it is noted that these claims were not rejected under 35 U.S.C. § 103.

The 35 U.S.C. §103 Rejection

The Examiner rejected claims 6, 7, 19, 20, 31, 38, 40, 42, 44, 47, 49, 51, 53, and 56 under 35 U.S.C. §103 as being unpatentable over Sachan et al. (U.S. Patent Publication No. US 2002/0111027 A1) and further in view of Van Buskirk et al. (U.S. Patent No. 6,346,741). The claims having been amended, this rejection is rendered moot.

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In particular each of claims 6, 7, 38, 40, 47, 49, and 56 recite methods that use a composition that includes no more than about 10 wt-% of an oxidizing agent. It is respectfully submitted that the general belief in the art prior to Applicants' invention was that when an oxidizing agent was included in a planarization composition, a relatively large amount should be used (e.g., greater than about 10 wt-%) for effectivity. For example, see Applicants' specification at page 3, lines 1-18. Applicants discovered, however, that good results with respect to planarization rate, selectivity, and surface finish could be obtained by using a lower amount, and often, of oxidizing agent, in combination with a complexing agent. In particular, it was highly unexpected that such a low amount of oxidizing agent in combination with a complexing agent would be at all useful for planarizing a Group VIII metal-containing surface. It is respectfully submitted that balancing planarization rate, selectivity of removal of materials, and good surface finish (e.g., without scratches or smearing) is not merely routine. Finding the right combination of components and their amounts is not trivial, particularly when planarizing Group VIII metal-containing surfaces.

Thus, it is respectfully submitted that the combination of Sachan et al. and Van Buskirk et al. does not render these claims obvious.

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Summary

It is respectfully submitted that the pending claims 1-13, 15-25, 27-31, 33, and 35-79 are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted for
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CERTIFICATE UNDER 37 CFR §1.10:

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The undersigned hereby certifies that the Transmittal Letter and the paper(s) and/or fee(s), as described hereinabove, are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR §1.10 on the date indicated above and is addressed to Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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